

CURRICULUM VITAE

Richard N. Mack
Professor Emeritus
School of Biological Sciences
Washington State University
Pullman, WA 99164
(509) 335-3316 or 335-3553; fax (509) 335-3184;
rmack@wsu.edu; <http://www.sbs.wsu.edu/mack/mack.htm>

Education:

Western State College of Colorado, B.A., 1967
Organization for Tropical Studies, Summer, 1967
Washington State University, Ph.D., 1971

Professional Experience:

Acting Instructor, Department of Botany, Washington State University, 1970
Visiting Scientist, School of Plant Biology, University College of North Wales,
Bangor, U.K., 1973-1974
Assistant Professor, Department of Biological Sciences, Kent State University, 1971-1975
Assistant Professor, Department of Botany and Program in General Biology, Washington State
University, 1975-1979
Associate Professor, Department of Botany and Program in General Biology, Washington State
University, 1979-1983
Professional Leave, University College of North Wales, United Kingdom, 1983
Professor, Department of Botany and Program in General Biology, Washington State University,
1983-1999
Acting Director, Ownbey Herbarium, Washington State University, 1992-93
Professional Leave, Harvard University, 1994-95
Chair, Department of Botany, Washington State University, 1986-1999
Professor, School of Biological Sciences, Washington State University, 1999-2015
Professional Leave, CSIRO-Entomology, Canberra, Australia, 2000-2001
Professional Leave, University of Toronto, Toronto, Canada, 2006-2007
International guest professor, Wuhan Botanical Institute (Chinese Academy of Sciences), 2010-2012.
Professor Emeritus, School of Biological Sciences, Washington State University, 2015-

Professional Service:

Editorial Service:

Member, Board of Editors, *Ecology and Ecological Monographs*, 1982-1985.
Member, Board of Editors, *Ecological Applications*, 1994-1998.
Member, Board of Advisors to the Editor, *New Phytologist*, 1995-1998.
Member, Editorial Board, *Oecologia*, 1986-1989.
Member, Editorial Board, *Biological Invasions*, 1998-2003; 2020-present.
Member, Publications Committee, Ecological Society of America, 1998-2000.
Guest Editor, Special Issue on Biotic Invasions, *Biological Invasions* 2(2): 2000.
Member, Editorial Board, *Frontiers in Ecology & the Environment*, 2011-2015.
Member, Editorial Board, *NeoBiota*, 2011-present.
Member, Editorial Board, *Journal of Ecology*, 2012-2015.

Granting Agency Service:

Member, sub-panel for Ecology, National Science Foundation, 1982-1985.

Member, Panel for the Biological Research Centers Program, National Science Foundation, 1987-1988.

Member, Panel for Improving Doctoral Dissertation Research, National Science Foundation, 1990.

Member, Review Panel, Office of Scientific Quality Review, ARS/USDA, Beltsville, MD (October, 2004-Jan. 2005).

Other:

Member, The Council, Ecological Society of America, 1982-1985.

Consultant, The Nature Conservancy (Olympia Office), 1975-1981.

Member, U.S. Delegation to the Soviet Union in conjunction with the Bi-national Agreement on the Preservation of Arid Ecosystems, April, 1983.

Co-organizer, NSF-funded Workshop on "An assessment of the likelihood for weediness to arise from the release of higher plants altered through recombinant DNA genetics," October 11-13, 1987, Coeur d'Alene, Idaho.

Contractor, Office of Technology Assessment, U. S. Congress, May 1991-October 1992 (I wrote the OTA report on the consequences of non-indigenous plants for the 1993 OTA publication "Harmful Non-Indigenous Species in the United States.).

Co-editor, SCOPE (Scientific Committee on Problems of the Environment) symposium volume, "Assessing the Impact of Biotic Invasions" [Planning meetings: Paris, France, December, 1996, and April, 1999; Stanford, CA, April, 1997, April, 1998 and Cape Town, February & September 2000].

Chair, Technical report in Ecological Society of America series, Issues in Ecology (Biotic Invasions), 1998-2000.

Member, IUCN (International Union for the Conservation of Nature) Specialist Group on Invasive Species, 1997-present.

Member, SCOPE (Scientific Committee on Problems of the Environment) Executive Committee, 1997-2003.

Member, Steering Committee, GISP (Global Invasive Species Programme, Phase I), 1997-2000.

Local Host Chair, 84th Annual Meeting of the Ecological Society of America, Spokane, WA (1997-1999).

Chair, Committee on "The Scientific Basis for Predicting the Invasive Potential of Non-indigenous Plants and Plant Pests in the United States", National (U.S.) Research Council, 1999-2001.

Chair, Review of the Rangeland Weeds Project, CSIRO (Australia), September 2000.

Chair, Review of the Pest Risk and Management Project, CSIRO (Australia), October 2000.

Member, Executive Board, GISP-II (Global Invasive Species Program) and Co-Chair, Evaluation, Assessment and Prediction Working Committee, 2001- 2004.

Member, E.O. Wilson Award Committee, American Society of Naturalists, July 2002-2004.

Invited speaker, U.S. Department of State Speaker's Program, Brazil, Aug. 2002.

Member, working group, The National Commission on Science for Sustainable Forestry (NCSSF). April, 2003.

Member, Non-native Species Task Group for the State of the Nation's Ecosystems report. Heinz Foundation. 2003-2004.

Member, National Invasive Species Council (NISC)/ Invasive Species Advisory Committee (ISAC) Subcommittee on Early Detection and Rapid Response 2002-2004.

Member, Ecological Society of America Rapid Response Team for Invasive Species (a public affairs committee), 2004-2012.

PhD external examiner, Department of Renewable Resources, University of Alberta, Edmonton, Alberta (March 2005).

Site visit member, "Canadian Aquatic Invasive Species Research Network" Canadian Natural Science and Engineering Research Council (NSERC). Toronto, Ontario (April 2005).

Panel member, ESA Press briefing, National Press Club, Washington, DC, 3 March 2006

Panel member, USDA/USFS Invasive Species Peer Review Panel, Washington, DC, October 2006
Co-PI and organizer, Indo-U.S. Science & Technology Forum workshop, “Indo-U.S. workshop on invasive plants in Indian Protected Areas”, Corbett National Park, India, November 2006.
Member, Advisory Board, Genome British Columbia Applied Genomics Innovation Program, December 2007-present
Invited witness. Field hearing “Losing Ground: The War on Buffelgrass.” U.S. House of Representatives, Committee on Natural Resources, Tucson, AZ, April 2010.
Consultant, *Arundo donax* Biological Control Program, USDA-ARS/APHIS, DHS-CBP/S&T, McAllen, Tx, March 2013

Awards and Recognition:

Washington State University, College of Sciences Distinguished Faculty Award, 2010.

Co-authored with J.L. Harper a paper (*Journal of Ecology* 65: 345-363) selected as among 100 influential papers published by the British Ecological Society in the last 100 years as part of the BES’s Centenary Celebrations (2014).

Lead author on a paper (*Ecological Applications* 10: 689-710) ranked among Notable Papers published by ESA in the society’s first 100 years. (June 2015).

Professional and Honorary Societies:

Botanical Society of America
British Ecological Society
Ecological Society of America
International Association for Ecology (INTECOL)

Current Research:

Plant invasions: population biology, ecological genetics, community-level effects, eradication.

Publications:

1. Mack, R. N. (1971). Pollen size variation in some North American pines as related to fossil pollen identification. Northwest Science 45: 257-269.
2. Mack, R. N. and V. M. Bryant (1974). Modern pollen spectra from the Columbia Basin, Washington. Northwest Science 48: 183-194.
3. Mack, R. N., V. M. Bryant and R. Fryxell (1976). Pollen sequence from the Columbia Basin, Washington: reappraisal of post-glacial vegetation. American Midland Naturalist 95: 390-397.
4. Mack, R. N. (1976). Survivorship of *Cerastium atrovirens* at Aberffraw, Anglesey. Journal of Ecology 64: 309-312.
5. Black, R. A. and R. N. Mack (1976). *Tsuga canadensis* in Ohio: Synecological and phytogeographical relationships. Vegetatio 32: 11-19.
6. Pell, W. K. and R. N. Mack (1977). The *Fagus grandifolia*-*Acer saccharum*-*Podophyllum peltatum* association in northeastern Ohio. Botanical Gazette 138: 64-70.
7. Mack, R. N. and J. L. Harper (1977). Interference in dune annuals: Spatial pattern and neighbourhood effects. Journal of Ecology 65: 345-363.
8. Mack, R. N. (1977). Mineral return via the litter of *Artemisia tridentata*. American Midland Naturalist 97: 189-197.
9. Mack, R. N., V. M. Bryant and W. K. Pell (1978). Forest pollen spectra from eastern Washington and northern Idaho. Botanical Gazette 139: 249-255.
10. Mack, R. N., N. W. Rutter and S. Valastro (1978). Late Quaternary pollen record from the San Poil river valley, Washington. Canadian Journal of Botany 56: 1642-1650.
11. Mack, R. N., N. W. Rutter, V. M. Bryant and S. Valastro (1978). Re-examination of postglacial vegetation history in northern Idaho: Hager Pond, Bonner Co. Quaternary Research 10: 241-255.
12. Mack, R. N., N. W. Rutter, V. M. Bryant and S. Valastro (1978). Late Quaternary pollen record from Big Meadow, Pend Oreille Co., Washington. Ecology 59: 956-966.
13. Mack, R. N., N. W. Rutter, V. M. Bryant and S. Valastro (1978). Postglacial vegetation history of Waits Lake, Stevens Co., Washington. Botanical Gazette 139: 499-506.
14. Mack, R. N. and D. A. Pyke (1979). Mapping individual plants with a field-portable digitizer. Ecology 60: 459-461.
15. Mack, R. N., R. Okazaki and S. Valastro (1979). Bracketing dates for two ash falls from Mount Mazama. Nature 279: 228-229.
16. Mack, R. N., N. W. Rutter and S. Valastro (1979). Holocene vegetation history of the Okanogan Valley, Washington. Quaternary Research 12: 212-225.

17. Mack, R. N. (1981). Invasion of *Bromus tectorum* L. into western North America: An ecological chronicle. *Agro-Ecosystems* 7: 145-165.
18. Mack, R. N. (1981). Initial effects of ash fall from Mount St. Helens on vegetation in eastern Washington and adjacent Idaho. *Science* 213: 537-539.
19. Mack, R. N. and J. N. Thompson (1982). Evolution in steppe with few large hooved mammals. *American Naturalist* 119: 757-773.
20. Bookman, P. A. and R. N. Mack (1982). Root interaction between *Bromus tectorum* and *Poa pratensis*: A three-dimensional analysis. *Ecology* 63: 440-446.
21. Rayburn, W. R., R. N. Mack and B. Metting (1982). Conspicuous algal colonization of the ash from Mount St. Helens. *Journal of Phycology* 18: 537-543.
22. Mack, R. N. and D. A. Pyke (1983). The demography of *Bromus tectorum* L.: Variation in time and space. *Journal of Ecology* 71: 69-93.
23. Bookman, P. A. and R. N. Mack (1983). Competition between *Bromus tectorum* and *Poa pratensis*: The role of light. *Oecologia* 57: 406-411.
24. Mack, R. N., N. W. Rutter and S. Valastro (1983). Holocene vegetation history of the Kootenai River Valley, Montana. *Quaternary Research* 20: 177-193.
25. Higgins, S. S., R. A. Bendel and R. N. Mack (1984). Assessing competition among skewed plant populations: An application of the jackknife. *Biometrics* 40: 131-137.
26. Christy, E. J. and R. N. Mack (1984). The demography of *Tsuga heterophylla* juveniles: Variation across the substrate mosaic. *Journal of Ecology* 72: 75-91.
27. Mack, R. N. (1984). Invaders at home on the range. *Natural History* 93: 40-47.
28. Mack, R. N. and D. A. Pyke (1984). The demography of *Bromus tectorum*: The role of microclimate, predation and disease. *Journal of Ecology* 72: 731-748.
29. Black, R. A. and R. N. Mack (1984). A seasonal leaf abscission in *Populus* induced by volcanic ash. *Oecologia* 64: 295-299.
30. Mack, R. N. (1985). Invading plants: Their potential contribution to population biology. in: *Studies on Plant Demography: John L. Harper Festschrift* (J. White ed.), Academic Press, pp. 127-142.
31. Black, R. A. and R. N. Mack (1986). Mount St. Helens: Recreating its effects on the steppe environment and ecophysiology. *Ecology* 67: 1289-1302.
32. Mack, R. N. (1986). Alien plant invasion into the Intermountain West: A case history. in: *Ecology of Biological Invasions of North America and Hawaii*. (H. A. Mooney and J. Drake, eds.). Springer-Verlag, New York, pp. 192-213.
33. Mack, R. N. (1986). Writing with precision, clarity, and economy. *Bulletin of the Ecological Society of America* 67: 31-35.

34. Mack, R. N. (1987). Effects of Mount St. Helens ashfall in steppe communities of eastern Washington. in: The Biological Effects of the Mount St. Helens and Other Volcanic Eruptions. (D. E. Bilderback and A. E. Leviton, eds.) University of California Press, Los Angeles, pp. 262-281.
35. Harris, E., R. N. Mack and M. S. B. Ku (1987). Death of steppe cryptogams under the ash from Mount St. Helens. American Journal of Botany 74: 1249-1253.
36. Higgins, S. S. and R. N. Mack (1987). Comparative responses of *Achillea millefolium* ecotypes to competition and soil type. Oecologia 73: 591-597.
37. Mack, R. N. (1989). Temperate grasslands vulnerable to plant invasion: Characteristics and consequences. In: Biological Invasions: A Global Perspective. (J. Drake, ed.) pp. 155-179. Wiley & Sons, New York.
38. Moody, M. E. and R. N. Mack (1988). Controlling the spread of plant invasions: The importance of nascent foci. Journal of Applied Ecology 25: 1009-1021.
39. Mack, R. N. (1988). First comprehensive botanical survey of the Columbia Plateau, Washington: The Sandberg and Leiberg expedition of 1893. Northwest Science 62: 118-128.
40. Tiedje, J. M., R. K. Colwell, Y. L. Grossman, R. E. Hodson, R. E. Lenski, R. N. Mack and P. J. Regal (1989). The planned introduction of genetically engineered organisms: Ecological considerations and recommendations. Ecology 70: 298-315.
41. NAS (National Academy of Sciences) (1989). Field testing genetically modified organisms: framework for decisions. Washington, D.C.: National Academy of Sciences, 170 pp. (I was a co-author for this publication.)
42. Mack, R. N. (1990). Catalog of woes. Natural History 99 (3): 44-53.
43. Pierson, E. A. and R. N. Mack (1990). The population biology of *Bromus tectorum* in forests: distinguishing the opportunity for dispersal from environmental restriction. Oecologia 84: 519-525.
44. Pierson, E. A. and R. N. Mack (1990). The population biology of *Bromus tectorum* in forests: effect of disturbance, grazing, and litter on seedling establishment and reproduction. Oecologia 84: 526-533.
45. Pierson, E. A., R. N. Mack and R. A. Black (1990). The effect of shading on photosynthesis, growth, and regrowth following defoliation for *Bromus tectorum*. Oecologia 84: 534-543.
46. Mack, R. N. (1991). The commercial seed trade: an early disperser of weeds. Economic Botany 45: 257-273.
47. Novak, S. J., R. N. Mack and D. E. Soltis (1991). Genetic variation in *Bromus tectorum* L.: Population differentiation in its North American range. American Journal of Botany 78: 1150-1161.
48. Rice, K. J. and R. N. Mack (1991). Ecological genetics of *Bromus tectorum*: I. A hierarchical analysis of phenotypic variation. Oecologia 88: 77-83.

49. Rice, K. J. and R. N. Mack (1991). Ecological genetics of *Bromus tectorum*: II. Intraspecific variation in phenotypic plasticity. *Oecologia* 88: 84-90.
50. Rice, K. J. and R. N. Mack (1991). Ecological genetics of *Bromus tectorum*: III. The demography of reciprocally sown populations. *Oecologia* 88: 91-101.
51. Mack, R.N. (1992). Characteristics of invading plant species. In: Alien plant invasions in native ecosystems of Hawai'i : management and research. Stone, C.P., C.W. Smith and J.T. Tunison (eds.). 1992. Pp. 42-45. University of Hawaii, Cooperative National Park Resources Studies Unit. Honolulu, Hawai'i.
52. Novak, S. J., R. N. Mack and P. S. Soltis (1993). Genetic variation in *Bromus tectorum* (Poaceae): introduction dynamics in North America. *Canadian Journal of Botany* 71: 144-1448.
53. Novak, S. J. and R. N. Mack (1993). Genetic variation in *Bromus tectorum* (Poaceae): Comparison between native and introduced populations. *Heredity* 71: 167-176.
54. Schierenbeck, K. A., R. N. Mack and R. R. Sharitz (1994). Effects of herbivory on growth and biomass allocation in native and introduced species of *Lonicera*. *Ecology* 75: 1661-1672.
55. Schierenbeck, K. A., J. L. Hamrick and R. N. Mack (1995). Allozyme variability between a native and an introduced species of *Lonicera*. *Heredity* 75: 1-9.
56. Williams, D. G., R. N. Mack and R. A. Black (1995). Ecophysiology and growth of introduced *Pennisetum setaceum* on Hawaii: the role of phenotypic plasticity. *Ecology* 76: 1569-1580.
57. Novak, S. J. and R. N. Mack (1995). Allozyme diversity in the apomictic vine *Bryonia alba*: potential consequences of multiple introductions. *American Journal of Botany* 82: 1153-1162.
58. Mack, R. N. (1995). Understanding the processes of weed invasions: The influence of environmental stochasticity. in: *Weeds in a Changing World* (C. Stirton, ed.), British Crop Protection Council, Symposium Proceedings No. 64. Pp. 65-74. Brighton, U.K.
59. Mack R. N. (1996). Biotic barriers to plant naturalization. in: *Proceedings of the IX International Symposium on Biological Control of Weeds*, pp. 39-46 (V. C. Moran and J. H. Hoffman, eds.), 19-26 January 1996, Stellenbosch, South Africa. University of Cape Town.
60. Mack, R. N. (1996). Predicting the identity and fate of plant invaders: emergent and emerging approaches. *Biological Conservation* 78: 107-121.
61. Mack, R. N. (1997). Plant invasions: early and continuing expressions of global change. in: *Past and Future Rapid Environmental Changes: The Spatial and Evolutionary Responses of Terrestrial Biota*, pp. 205-216 (B. Huntley, W. Cramer, A. V. Morgan, H. C. Prentice, and J. R. M. Allen, eds.), NATO ASI series. Series 2: Global Environmental Change, Vol. 47. Springer-Verlag, Berlin.
62. Pitelka, L. F. and the Plant Migration Workshop Group (1997). Plant migration and climate change. *American Scientist* 85: 464-473. (I was one of 22 co-authors for this synthetic

- paper.) [This article reprinted in: Kareiva, P. 1998. Exploring Ecology and its Applications: Readings from American Scientist. Sinauer, Sunderland, MA.]
63. Mack, R. N. (1999). Two recommendations for more rapid publication in ESA journals: observations of a subject editor. *Bulletin of the Ecological Society of America* 80: 83-84.
 64. Mack, R. N. and A. Occhipinti. (1999). Biotic invasion: a global perspective and ecology of invasions: patterns and perspectives. in: *Perspectives in Ecology* (A. Farina, ed.), Backhuys (Leiden). pp. 67-74.
 65. Mack, R. N. (1999). The motivation for importing potentially invasive plant species: a primal urge? in: *Proceedings of the VI International Rangeland Congress* pp. 557-562. Townsville, Australia.
 66. Ricciardi, A., W.W.M. Steiner, R. N. Mack and D. Simberloff. (2000). Towards a global information system for invasive species. *BioScience* 50: 239-244.
 67. Mack, R. N., D. Simberloff, W. M. Lonsdale, H. Evans, M. Clout and F. A. Bazzaz. (2000). Biotic invasions: causes, epidemiology, global consequences and control. *Ecological Applications* 10: 689-710. (published simultaneously in a version for the general public by the Ecological Society of America. Issues in Ecology No. 5. Spring, 2000.)
 68. Mack, R. N. (2000). Assessing the extent, status and dynamism in plant invasions: current and emerging approaches. in: *The Impact of Global Change on Invasive Species* (H. A. Mooney and R. J. Hobbs, eds.), Island Press, Covelo, CA, pp. 141-168.
 69. Novak, S.J. and R. N. Mack. (2000). Clonal diversity within and among introduced populations of the apomictic vine *Bryonia alba* (Cucurbitaceae). *Canadian Journal of Botany* 78:1469-1481.
 70. Mack, R. N. (2000). Cultivation fosters plant naturalization by reducing environmental stochasticity. *Biological Invasions* 2(2): 111-122.
 71. Novak, S.J. and R. N. Mack. (2001). Tracing plant introduction and spread into naturalized ranges: genetic evidence from *Bromus tectorum* (cheatgrass). *BioScience* 51: 114-122.
 72. Mack, R.N. and W. M. Lonsdale. (2001). Humans as global plant dispersers: getting more than we bargained for. *BioScience* 51: 95-102.
 73. Mack, R.N. (2001). Motivations and consequences of the human dispersal of plants. In: McNeely, J.A. (ed.). *The Great Reshuffling: Human Dimensions in Invasive Alien Species*. Pp. 23-34. International Union for the Conservation of Nature, Gland, Switzerland and Cambridge, UK.
 74. Mack, R. N. and W. M. Lonsdale. (2002). Eradicating invasive plants: hard-won lessons for islands. In: "Turning the Tide: the Eradication of Invasive Species" (D. Veitch and M. Clout, editors) Invasive Species Specialty Group of the World Conservation Union (IUCN): Auckland, New Zealand, pp. 164-172.
 75. National Research Council. (2002). *Predicting Invasions by Nonindigenous Plants and Plant Pests*. National Academy of Sciences, Washington, D.C. (I chaired this committee and the published report). 198 pp.

76. Mack, R. N. (2002). Natural barriers to plant invasions in the Sonoran Desert. in: *Invasive Exotic Species in the Sonoran Region* (B. Tellman, ed.), The University of Arizona Press, pp. 63-76.
77. Bartlett, E.A., S.J. Novak, and R.N. Mack. (2002). Genetic variation in *Bromus tectorum* (Poaceae): differentiation in eastern United States. *American Journal of Botany* 89: 626-636.
78. Mack, R.N. and M. Erneberg. (2002). The United States naturalized flora: largely the product of deliberate introductions. *Annals of the Missouri Botanical Garden* 89: 176-189.
79. Mack, R.N. (2003). Plant naturalizations and invasions in the eastern United States: 1634-1860. *Annals of the Missouri Botanical Garden* 90: 77- 90.
80. Mack, R. N. (2003). Phylogenetic constraint, absent life forms and pre-adapted alien plants: a prescription for biological invasions. *International Journal of Plant Sciences* 164 (3 Suppl): S185-S196.
81. Mack, R.N. (2003). Global plant dispersal, naturalization and invasion: pathways, modes and circumstances. In "*Invasive Species. Vectors and Management Strategies*" (G. Ruiz and J. Carlton, eds.) Island Press. pp. 3-30.
82. Mack, R. N. and S. K. Foster. (2004). Eradication or Control? Combating plants through a lump sum payment or on the installment plan. pp. 56-61. *In: Proceedings of the Fourteenth Australian Weeds Conference*, B.M. Sindel and S.B. Johnson, eds. (Weed Science Society of New South Wales, Sydney).
83. Mack, R.N. (2004). Trade Routes for Commerce in Plants or Pathways for Invasive Species? The Dualism of International Commerce. pp. 72-77. *In: Proceedings of the Fourteenth Australian Weeds Conference*, B.M. Sindel and S.B. Johnson, eds. (Weed Science Society of New South Wales, Sydney).
84. Mack, R.N. (2005). Assessing biotic invasions in time and space: the second imperative. pp. 179-208. *In: Invasive Alien Species: a New Synthesis*. Mooney, H.A., R. N. Mack, J.A. McNeely, L. Neville, P.J. Schei, and J.K. Waage (eds.), Island Press, Washington D.C.
85. Novak, S.J. and R. N. Mack. (2005). Genetic bottlenecks in alien plant species: influence of mating systems and introduction dynamics. Pp. 95-122. *In: Exotic Species – Bane to Conservation and Boon to Understanding: Ecology, Evolution and Biogeography*. (D. F. Sax, S. D. Gaines, and J. J. Stachowicz (eds.). Sinauer, MA.
86. Chornesky, E.A., R. N. Mack et al. (2005). Science Priorities for Reducing the Threat of Invasive Species to Sustainable Forestry. *BioScience* 55(4): 335-348.
87. Mack, R.N. (2005) Predicting the identity of plant invaders: future contributions from horticulture. *HortScience* 40: 1168-1174.
88. Raghu, S., R. N. Mack et al. (2006) Adding biofuels to the invasive species fire? *Science* 313: 1742.
89. Mortenson, S.G. and R. N. Mack. (2006) The fate of alien conifers in long-term plantings in The United States. *Diversity and Distributions* 12: 456-466.

90. Lodge, D., R. N. Mack et al. (2006). Biological Invasions: Recommendations for U.S. Policy and Management. Ecological Society of America Report. Ecological Applications 16(6): 2035-2054.
91. Mack, R.N., B. Von Holle and L. Meyerson (2007). Assessing the impacts of invasive alien species across multiple spatial scales: the need to work globally and locally. Frontiers in Ecology and the Environment 5(4): 217-220.
92. Valliant, M.T., R. N. Mack and S. J. Novak (2007). The introduction history and population genetics of the invasive grass *Bromus tectorum* (Poaceae) in Canada. American Journal of Botany 94 (7): 1156-1169.
93. Reaser, J. K., R.N. Mack et al. (2007). Ecological and Socio-economic Impacts of Invasive Alien Species in Island Ecosystems. Environmental Conservation 34(2): 98-111.
94. Pattison, R.R., and R. N. Mack (2008). Potential distribution of the invasive tree *Triadica sebifera* (Euphorbiaceae) in the United States: evaluating predictions by CLIMEX with field trials. Global Change Biology 14: 813-826.
95. Ding, J., R. N. Mack et al. (2008). China's booming economy is sparking and accelerating biological invasions. BioScience 58: 317-324.
96. Mack, R.N. (2008). Evaluating the credits and debits of a biofuel species: giant reed (*Arundo donax*) Weed Science 56: 883-888.
97. Schachner, L., R.N. Mack and S.J. Novak. (2008). *Bromus tectorum* (Poaceae) in mid-continental United States: population genetic analysis of an ongoing invasion. American Journal of Botany 95(12): 1584-1595.
98. Mack, R.N. and S. K. Foster. (2009). Eradicating plant invaders: combining ecologically based tactics and broad-sense strategy. In: "Management of Invasive Weeds" (Inderjit, ed.), Springer, Heidelberg, Germany, pp. 35-60.
99. Pattison, R.R. and R.N. Mack. (2009). Environmental constraints on the invasion of *Triadica sebifera* in the eastern U.S.: an experimental field assessment. Oecologia 158: 591-602.
100. Wainger, L.A., R.N. Mack et al. (2010). Can the concept of ecosystem services be practically applied to improve natural resource management decisions? Ecological Economics 69: 978-987.
101. Davis A.S., R. N. Mack et al. (2010). Screening bioenergy feedstock crops to mitigate invasion risk. Frontiers in Ecology and the Environment 8: 533-539.
102. Minton, M.L. and R.N. Mack. (2010). The naturalization of plant populations: effects of cultivation and population size and density. Oecologia 164: 399-409.
103. Mack, R.N. Cheatgrass (*Bromus tectorum* L.) (2011). In: Encyclopedia of Invasive Introduced Species (D. Simberloff and M. Rejmánek, eds). Pp. 108-113. University of California Press, Berkeley.

104. Huttanus, T.D., R.N. Mack, and S.J. Novak (2011). Propagule pressure and introduction pathways of *Bromus tectorum* (cheatgrass; Poaceae) in the Central United States. *International Journal of Plant Science* 172(6): 783-794.
105. Mack, R.N. (2011). Fifty years of “Waging war on cheatgrass”: research advances, while meaningful control languishes. "Fifty Years of Invasion Ecology" (D. Richardson, ed.). Pp. 253-265. Wiley-Blackwell Press, Oxford.
106. Mack, R.N. and M.C. Smith. (2011) Invasive plants as catalysts for the spread of human parasites. *NeoBiota* 9:13-29.
107. Mack, R.N. (2012) Sustained control of plant invaders requires our sustained public outreach. Pp. 310-316. In: “Developing solutions to evolving weed problems.” 18th Australasian Weed Conference. Melbourne, Australia.
108. Smith, M.C. and R.N. Mack. (2013) Shade response of temperate Asian bamboos: a harbinger of their naturalization in Pacific Northwest coniferous forests? *Biological Invasions* 15: 2081-2093.
109. Connolly, B.M., D.E. Pearson, R.N. Mack. (2014) Granivory of invasive, naturalized, and native plants in communities differentially susceptible to invasion. *Ecology* 95: 1759-1769.
110. Pawlak, A.R., R.N. Mack and S.J. Novak. (2015) Invasion of *Bromus tectorum* (L.) into California and the American Southwest: rapid, multi-directional and genetically diverse. *Biological Invasions* 17: 287-306.
111. Smith, M.C., R. Gomulkiewicz and R.N. Mack. (2015) Potential role of masting by introduced bamboos in deer mice (*Peromyscus maniculatus*) population irruptions: public health and environmental consequences. *PLoS ONE* 10(4): e0124419.
112. Novak, S.J. and R.N. Mack. (2016) Mating system, introduction and genetic diversity of *Bromus tectorum* in North America, the most notorious product of evolution within *Bromus* section *Genea*. In: *Exotic Annual Bromus Grasses in Semiarid Ecosystems of the Western US: Assessing Causes, Consequences, and Management Alternatives* (M. Germino, C. Brown, and J. Chambers, eds.), Springer, pp. 99-132.
113. Gordon, D.R., R.N. Mack et al. (2016) Weed risk assessments are an effective component of invasion risk management. *Invasive Plant Science and Management* 9:81-83.
114. Connolly, B.M., J. Powers and R.N. Mack (2017) Biotic constraints on the establishment and performance of native, naturalized, and invasive plants in the Pacific Northwest (USA) steppe and forest. *Neobiota* 34: 21-40.
115. Connolly, B.M., L. Carris and R.N. Mack (2018) Soil-borne seed pathogens: contributors to the naturalization gauntlet in Pacific Northwest (USA) forest and steppe communities? *Plant Ecology* 219: 359-368.

116. Kelly, L.J., R.N. Mack and S.J. Novak. Genetic analysis of *Bromus tectorum* (Poaceae) in the Mediterranean Region: biogeographical pattern of native populations. Heredity, submitted.

Editorials

Mack, R.N. 2019. Taking personal environmental action in a post-truth world. *Frontiers in Ecology & the Environment*. 17 (10) 243.

Edited Volume

Mooney, H.A., R. N. Mack, J.A. McNeely, L. Neville, P.J. Schei, and J.K. Waage (eds.). (2005). *Invasive Alien Species: a New Synthesis*. Island Press, Washington D.C.

Other

James A. Young and C. D. Clements. (2010). Cheatgrass. Fire and forage on the range. *Biological Invasions* 12(4): 973. (book review).

Grants and Contracts (abridged)

<u>Title</u>	<u>Agency</u>	<u>Amount</u>
Studies in the late Quaternary vegetation history on the Okanogan Highlands of eastern Washington and adjacent Idaho, BMS-03234	National Science Foundation	\$24,000
Investigation in the late Quaternary vegetation history of eastern Washington and adjacent Idaho	Washington State University Research Grant-in-Aid	\$4,094
Plant population biology within steppe communities in eastern Washington	National Science Foundation	\$103,441
Wildlife habitat identification from timber management data in the Blue Mountains, Oregon	U.S. Forest Service, Pacific Northwest Experiment Station, Portland	\$15,492
Holocene vegetation history of the Fisher River Valley, Montana	U.S. Army Corps of Engineers contract via Montana State Univ.	\$10,357
Plant population biology within steppe communities of eastern Washington--the role of alien bromes, DEB-8001518	National Science Foundation	\$97,500
Perturbation and recovery: Effects of the Mount St. Helens ashfall on vegetation of eastern Washington, DEB-8020872	National Science Foundation	\$7,941

Effects of the Mount St. Helens ashfall on the steppe vegetation of eastern Washington, DEB-8022134	National Science Foundation	\$50,510
Perturbation and Community Response: effects of the Mount St. Helens' ashfall on xerophytic vegetation in eastern Washington (with R. A. Black), DEB-8200649	National Science Foundation	\$102,768
Improvement of Instrumentation in Synecology (Bot 462/562) and Field Ecology (Bot 463/563)	Washington State University Foundation	\$4,300
Plant population biology within steppe communities of eastern Washington--defining the limits of spatial and temporal distribution <u>Grants and Contracts</u> (in force since 1975) <i>con't</i> :	National Science Foundation 6/1/84-5/31/87	\$130,000
<u>Title</u>	<u>Agency</u>	<u>Amount</u>
An assessment of the likelihood for weediness to arise from the release of higher plants altered through recombinant DNA genetics	National Science Foundation 9/1/87-11/30/87	\$16,598
Genetic Improvement of Chickpea (with T. Okita, V. Franceschi, F. Muehlbauer, and C. Ryan)	McKnight Foundation 1995-1998	\$720,000
Impacts of biotic invasions in terrestrial ecosystems: spatial assessment, base rates and onsequences (with M. Vila and W.M. Lonsdale)	ESF 2001	\$40,000
"Comparing costs, risk and benefit trade-offs under uncertainty: cheatgrass case study"	USDA 2003-2005	\$36,000*
Indo-U.S. workshop on invasive plants in Indian Protected Areas (with K.G. Saxena)	IUSST Forum 2006	\$80,000**
Experimental field-screening protocol for non-native plant importation	USDA/APHIS 2007-2008 2008-2009 2009-2010	\$15,000 \$15,000 \$20,000
Invasions of arid plant communities: Null models and functional processes	NSF/PIRE 2010	\$4.837,000 (not funded)
Assessing the current status of bamboo naturalizations in the U.S.: current and pending impacts.	USDA/APHIS 2011-2012	\$30,000
PIRE (pre-proposal): Invasions of arid plant communities: Null models and functional processes (submitted)	NSF 2012-2017	\$3,668,900.

*portion of grant budgeted to me through U. of Maryland

** funds provided in Indian currency

Student Theses (at WSU):

- Pell, William, M.S. (1976). Interference in *Bromus tectorum* L.: An analysis of individual plant response.
- Nowakowski, Marya, M.S. (1978). Soil depth and elevation as a basis for predicting three steppe habitat types in Wallowa County, Oregon.
- Meador, Nancy, M.S. (1979). Relationship between regeneration failures and habitat types in the Clackamas River drainage, Oregon.
- Higgins, S. S., M.S. (1980). Some competitive effects of a group of weedy species on seedlings of *Agropyron spicatum* and *Festuca idahoensis*.
- Bookman, P. A., Ph.D. (1980). Interspecific competition between *Bromus tectorum* L. and *Poa pratensis* L. in eastern Washington.
- Christy, E. J., Ph.D. (1982). Population dynamics in understory *Tsuga heterophylla*, western hemlock, in the Cascade Mountains, Oregon.
- Pyke, D. A., Ph.D. (1983). Demographic responses of *Bromus tectorum* and seedlings of *Agropyron spicatum* to grazing by cricetids.
- Harris, E., M.S. (1984). The effect of ash from the May 1980 eruption of Mount St. Helens on cryptogams.
- Higgins, S. S., Ph.D. (1984). A comparison of plant responses to stress and competition on serpentine and zonal soil.
- Pierson, E. A., Ph.D. (1988). The population biology of *Bromus tectorum* along an elevational gradient.
- Engle, J. L., M.S. (1988). The spread and effect of the vine *Bryonia alba* in Whitman County, Washington.
- Novak, S. J., Ph.D. (1990). Multiple introduction and founder effects in *Bromus tectorum* L.: an analysis of Eurasian and North American populations.
- Sardinia, T. L., M.S. (1990). The role of trichomes in defense of *Geranium viscosissimum* F. and M. against herbivores.
- Hasey, M. M., M.S. (1990). The ecology of herbaceous perennial lupines in arid south-central Washington.
- Cassidy, K. M., Ph.D. (1991). Identifying the causes for naturalization versus extinction among weedy immigrants in eastern Washington: an experimental evaluation.
- Schierenbeck, K. A., Ph.D. (1992). Comparative ecological and genetic studies between a native (*Lonicera sempervirens* L.) and an introduced congener (*L. japonica* Thumb.).
- Williams, D. G., Ph.D. (1992). Physiological ecology of the invasive grass *Pennisetum setaceum* on Hawaii.

- McClung, C. H., M.S. (1996). The ecophysiology of *Bryonia alba*: measurements under field conditions.
- Bartlett, E. A., M.S. (1997). Allozymic characterization of eastern North American populations of *Bromus tectorum*.
- Kinter, C.L., Ph.D. (2003) Comparative ecological genetics of *Bromus tectorum* (cheatgrass, downy brome) from native European, naturalized New Zealand invasive North American populations.
- Foster, S.K., M.S. (2003). The barberry eradication program in Whitman County, Washington: a reassessment.
- Pattison, R.R., Ph.D. (2003). Ecological constraints on the distribution of the Chinese tallow tree (*Sapium sebiferum*) in the southeastern U.S.A.
- Minton, M.S., Ph.D. (2003). Plant naturalization: surviving the gauntlet of environmental stochasticity.
- Schachner, L.J., M.S. (2005). Genetic variation in *Bromus tectorum*: differentiation in mid-continent North America.
- Valliant, M.T., M.S. (2005). Genetic diversity of *Bromus tectorum* in Canada.
- Mortenson, S.G., M.S. (2005). The fate of alien conifers in long-term plantations in the U.S.
- Brooke, M.M., M.S. (2006). The fate of Chinese understory species in coniferous forests of the Pacific Northwest: the role of light.
- Lindon, H.L., M.S. (2007). Genetic variation in *Bromus tectorum* (Poaceae) in the eastern Mediterranean Region
- Smith, M.S., Ph.D. (2011). Bamboos of temperate Eastern Asia: potential as invaders in North America forest understories.
- Pawlak, A.R., M.S. (2011). Genetic variation in *Bromus tectorum* (L.) in the U.S. Southwest and California.
- Kelly, Lauren J., M.S. (2012) Genetic variation in *Bromus tectorum* (Poaceae) in the Mediterranean Region: Biogeographical history of native population
- Almquist, T., Ph.D. (2013) *Bromus tectorum* in the Intermountain West and Great Plains (USA): population variation and regional environment influence the course of an invasion.
- Connolly, B.M., Ph.D. (2013). Comparing biotic resistance between Pacific Northwest steppe and coniferous forest: the role of predation, competition and parasitism.

Professional Papers Delivered (since 1975):

- Late Pleistocene pollen sequence from Hager Pond, Bonner Co., Idaho. American Association of Stratigraphic Palynologists Annual Meeting. Houston, TX (October, 1975).

Late Quaternary pollen records from northeastern Washington and adjacent Idaho. In symposium: "Terrestrial and Aquatic Ecological Studies of the Northwest." Northwest Scientific Association Annual Meeting. Cheney, WA (March, 1976).

Interference among sand dune annuals: spatial pattern and neighborhood effects. Ecological Society of America Annual Meeting. New Orleans, LA (June, 1976).

Co-organizer and presider at symposium--Plant populations: Evolutionary and demographic approaches. Ecological Society of America Annual Meeting. East Lansing, MI (August, 1977).

Interference in *Bromus tectorum*: an analysis of individual plant responses. In symposium--Plant populations: Evolutionary and demographic approaches. Ecological Society of America Annual Meeting. East Lansing, MI (August, 1977).

Late Quaternary vegetation history of northeastern Washington and northern Idaho. Ecological Society of America Annual Meeting. Athens, GA (August, 1978).

Recruitment, survivorship and fecundity of *Bromus tectorum* L. in eastern Washington, USA. International Botanical Congress. Sydney, Australia (August, 1981).

Effects of Mount St. Helens ashfall in steppe environments of eastern Washington. In Ecological Society of America Symposium: Biological effects of Mount St. Helens eruption. AAAS Pacific Division meeting. Eugene, OR (June, 1981).

The demography of *Bromus tectorum*: Variation in time and space. In symposium: "Long-lived herbs: population dynamics and species interaction." Ecological Society of America, Annual Meeting. College Park, PA (August, 1982).

The effect of the Mount St. Helens ashfall on the xerophytic vegetation of eastern Washington. In symposium: "Mount St. Helens ecological research on the effects of catastrophic vulcanism and subsequent ecosystem recovery." Ecological Society of America Annual Meeting. Grand Forks, ND (August, 1983).

Alteration of seed removal in steppe communities since deposition of volcanic ash from the May 1980 eruption of Mount St. Helens, Washington (USA). Poster presentation. Third European Ecological Symposium. University of Lund, Lund, Sweden (August, 1983).

Alteration of seed removal in steppe communities since deposition of volcanic ash from the May 1980 eruption of Mount St. Helens, Washington. Poster presentation. Ecological Society of America Annual Meeting, Fort Collins, CO (August, 1984).

Alien plant invasion into the Intermountain West: A case history. In symposium: Ecology of Biological Invasions in North America and Hawaii. Sponsored by the International Council of Scientific Unions. Asilomar, CA (October, 1984).

Evaluating factors that affect the rate of migrations. In symposium entitled: "Vegetation Response to Temporal Climatic Change." Ecological Society of America Annual Meeting. Minneapolis, MN (June, 1985).

U.S. National Park Service. Sixth Hawaii Volcanoes National Park Natural Sciences Conference. Contributor to symposium entitled: "Control of Introduced Plants in Hawaii's Native Ecosystems." Hilo, HI (June, 1986).

Ecological genetics of *Bromus tectorum* (Poaceae): Ecotypic variation in plant size hierarchies and phenology (co-authored with Kevin Rice). Ecological Society of America Annual Meeting. Syracuse, NY (August, 1986).

Plant invasions in temperate grasslands. SCOPE project on the ecology of biological invasions. International Synthesis Meeting. Honolulu, HI (November, 1986).

Ecological genetics of the alien *Bromus tectorum* in western North America. Invited contributor to a symposium, "Population Genetics and Population Biology." XIV International Congress. Berlin, Germany (July, 1987).

Participant and invited speaker, "Workshop on Regulatory Considerations for the testing and use of genetically-engineered plants." Boyce Thompson Institute for Plant Research at Cornell University. Ithaca, NY (October, 1987).

"Invasive plant species" in: International Conference on Risk Assessment in Agricultural Biotechnology. University of California. Davis, CA (July, 1988).

Contributions of phenotypic plasticity and micro-differentiation to the spread of *Bromus tectorum*. Contributor to symposium entitled, "New directions in the assessment of biological invasions." (I also co-organized and presided at this symposium.) Ecological Society of America National Meeting. Davis, CA (August, 1988).

Committee chair and speaker. "Environmental issues" in USDA, EPA, FDA, sponsored Transgenic Plant Conference. Annapolis, MD (September, 1988).

Post-settlement vegetation changes in the interior Pacific Northwest. Symposium in honor of Henry P. Hansen, Quarternary Research Center, University of Washington. Seattle, WA (May, 1989).

Genetic variation and population differentiation in the recently introduced vine *Bryonia alba* L. (co-authored with Stephen J. Novak). Ecological Society of America Annual Meeting. Snowbird, UT (August, 1990).

Invited keynote speaker. U. S. National Park Service Annual Western Regional Meeting. Volcano, HI (February, 1991).

Environmentally dependent correlations among physiological, morphological and reproductive characters in an alien grass in Hawaii (co-authored with David G. Williams and R. A. Black). Ecological Society of America Annual Meeting. San Antonio, TX (August, 1991).

Photosynthesis in a closed canopy and an open field for introduced and native species of *Lonicera* (co-authored with Kristina A. Schierenbeck and Rebecca R. Sharitz). Ecological Society of America Annual Meeting. San Antonio, TX (August, 1991).

Invited symposium speaker. "What makes a community vulnerable to the entry of alien plants?" in "Biological Pollution: The control and impact of invasive exotic species." Indiana Academy of Sciences symposium. Indianapolis, IN (October 25-26, 1991).

Genetic variation in *Bromus tectorum* in Europe: using electrophoresis to search for the source(s) of its introduced populations in North America (co-authored with Stephen J. Novak). Botanical Society of America Annual Meeting. Honolulu, HI (August, 1992). (I co-chaired the section in which this paper was presented.)

Plasticity of growth and photosynthetic characters in the introduced C₄ *Pennisetum setaceum* from different elevations in Hawaii (co-authored with David G. Williams and R. A. Black). Ecological Society of America Annual Meeting. Honolulu, HI (August, 1992).

Differential effects of herbivory on relative growth rates and root:shoot allocation between native and introduced species of *Lonicera* (co-authored with K. Schierenbeck and R. R. Sharitz). Ecological Society of America Annual Meeting. Honolulu, HI (August, 1992).

Invited speaker. International Consultation on Rice Bio-safety in South-East Asia (sponsored by USDA, Rockefeller Foundation and UNESCO). Chol buri, Thailand (September, 1992).

Invited speaker. Plant Introductions in Iceland (sponsored by Icelandic Agricultural Research Institute). Reykjavik, Iceland (March, 1994).

Invited speaker. Invasion Biology Workshop. University of California, Davis (May, 1994).

Invited speaker. Global change predicted; global change realized (in NATO Advanced Research Workshop, "Past and Future Rapid Environmental Change"). Crieff, Great Britain (June, 1995).

Ecophysiology of *Bryonia alba*: measurements under field conditions (co-authored with C. McClung & R. A. Black). Ecological Society of American Annual Meeting. Snowbird, UT (August, 1995).

Invited speaker. Understanding the processes of weed invasions: the role of environmental stochasticity. British Crop Protection Council, pre-conference weed symposium. Brighton, Great Britain (November, 1995).

Invited speaker and session chair. Biotic barriers to plant naturalization. IX International Symposium on Biological Control of Weeds. Stellenbosch, South Africa (January, 1996).

Genetic variation and colonization dynamics of *Bromus tectorum* (Poaceae): a global perspective. (Co-authored with J. M. Kevin and S. J. Novak.) American Institute of Biological Sciences annual meeting. Seattle, WA (August, 1996).

Invited speaker. Plant invasions on the Columbia Plateau. IAI-AMIGO Workshop on Invaders-Fragmentation-Fire. Silver Falls State Park, OR (September, 1996).

Invited speaker. Plant dispersal and migration in response to climatic change. Institute of Advanced Studies, Australian National University. Batemans Bay, N.S.W., Australia (October, 1996).

Invited speaker (and Symposium Co-Chair). A demographic explanation for plant naturalization: the role of cultivation in ameliorating environmental stochasticity in symposium, "Recent attempts to predict the character of plant invaders and the communities they invade." Ecological Society of America Annual Meeting, Albuquerque, NM (August, 1997).

Participant, DIVERSITAS meeting. Universidad Nacional Autonoma de Mexico, Mexico City, Mexico (March, 1998).

Invited speaker. Assessing the extent, status and dynamism of plant invasions within global change scenario(s): current and emerging approaches. SCOPE meeting, Stanford University, Stanford, CA (April, 1998).

Symposium organizer, speaker, and summary panelist. An experimental investigation of plant naturalization: the role of cultivation in ameliorating environmental stochasticity in symposium "Biotic Invasions: a Global Perspective." VII International Congress of Ecology, Florence, Italy (July, 1998).

Invited speaker and session chair. Databases useful in assessing plant invasions. Introduced Species Workshop. University of Tennessee, Knoxville, TN (October, 1998).

Invited speaker. Invasive Weeds Workshop. Landcare Research, Crown Research Institute, Hamilton, New Zealand (May, 1999).

Invited speaker in symposium, "People and plant invasions in rangelands." International Rangeland Congress, Townsville, Australia (July, 1999).

Invited speaker. "Global plant dispersal: pathways, modes and circumstances" in meeting "Invasion Pathways: analysis of invasion patterns and pathway management." (GISP meeting), Annapolis, MD (November, 1999).

Invited Keynote Address, "Controlling invasive plants: win (a few), lose (many), draw (a few more)." Florida Exotic Pest Plant Council, Fifteenth Annual Conference. Key Largo, FL (May, 2000).

Invited symposium keynote speaker, "Modes of movement of invasive plants." Third International Weed Science Congress (IWSC), Foz Do Iguassu, Brazil. (June, 2000).

"Naturalized floras are largely the products of deliberate introductions: assessment of temperate and subtropical floras." (co-authored with Marianne Erneberg.) Ecological Society of America, Annual Meeting, Snowbird, UT (August, 2000).

"Comparative ecological genetics of European and North American populations of *Bromus tectorum*." (co-authored with Kinter, C. Lynn) Ecological Society of America, Annual Meeting, Snowbird, UT, August, 2000.

Invited speaker. "Assessing global biotic invasions in time and space: the second imperative" Global Invasive Species Initiative Program, synthesis meeting, Cape Town, South Africa. (September, 2000).

Invited speaker. "Is there a scientific basis for determining which future immigrant species will become threats to plants?" Ecological Risk Assessment Symposium. CSIRO-Entomology. Canberra, Australia. (October, 2000).

Invited speaker. "Controlling invasive plants: win (a few), lose (many), draw (a few more)." South Australia Weed Science Society General Meeting, Adelaide, Australia. (October, 2000).

"Controlling invasive plants: hard-won lessons from continents and islands" (with W.M. Lonsdale). Eradication of Island Invasives Conference. Auckland, New Zealand. (February, 2001).

Invited symposium speaker. "Predicting communities vulnerable to plant invasions" in: Current status of knowledge on Invasive species: theory and practice", Annual meeting, Ecological Society of America, Madison, WI. (August, 2001).

Invited symposium speaker. "Rise of the naturalized flora of the U.S.: 1660-1860" In "Biological Invasions." 48th annual Systematics Symposium, Missouri Botanical Garden. St. Louis, MO. (October, 2001).

Invited symposium speaker. "An international assessment of the extent and impact of invasive species" In "Biodiversity Science and Global Research: The International Biodiversity Observation Year" AAAS Annual Meeting, Boston, MA (February, 2002).

Invited symposium speaker. "Native environments and exotic species: an ecological perspective" In "Restoration ecology and native environments: challenging realities provoke changing perspectives" AAAS Annual Meeting, Boston, MA (February, 2002).

Invited symposium speaker. Invasive species as threats to U.S. agriculture and biodiversity. In "Science and Conservation Colloquium: Farm bill opportunities and challenges." National Research Council, Washington, DC (April 2002).

Keynote speaker. Causes and consequences of plant invasions. In: Weeds Across Borders. North American weed issues in transportation corridors and the lands they run through". Federal Highway Administration conference, Tucson, AZ (May, 2002).

"Pest attacks in botanic gardens: a potential early warning system for invasive plant pests" In: "Science for Plant Conservation: An International Conference for Botanic Gardens", Botanic Gardens Conservation International. Trinity College, Dublin, Ireland (July, 2002).

"Yunnan: a recipient and potential source of invasive plant species" Annual Meeting, Ecological Society of America, Tucson, AZ. (August, 2002). (with Sun Wei-bang).

Invited program speaker. "The global context: the Convention on Biological Diversity and the Global Invasive Species Programme." In: Exotic Species Invasions and Sustained Development. Porto Alegre and Ponta Grossa, Brazil (August, 2002).

Invited program speaker. "Economic Impacts of Invasive Alien Species and the Prevention of Invasions." In: Exotic Species Invasions and Sustained Development. Porto Alegre and Ponta Grossa, Brazil (August, 2002).

Invited program speaker. "Phylogenetic constraints, absent life forms and pre-adapted alien plants: a prescription for biological invasion." In: Biological Invasions in Terrestrial Ecosystems: an evolutionary perspective. European Science Foundation event. Halle, Germany (September, 2002).

Invited workshop speaker. "Overview of the Global Invasive Species Programme." In: The Prevention and management of Invasive alien species: forging cooperation throughout the Austral Pacific Region. Honolulu, HI. (October, 2002).

Invited symposium speaker. "Predicting the identity of future invasive species: hard-won progress: Symposium on plant molecular biology and biodiversity. Institute of Botany, Academia Sinica. Taipei, Taiwan. (November, 2002).

Invited Keynote speaker. I Congreso Nacional Sobre Sspecies Exóticas Invasoras, EEI 2002. Leon, Spain (June 2003).

Invited symposium speaker. "Biological invasions, stochastic events and global change: an uncertain world becomes more uncertain" In symposium, "Biological Invasions in a Time of Global Change" Annual meeting, Ecological Society of America, Savannah, GA. (August 2003).

Keynote Banquet Speaker. "Trouble in Shangri-la: Looming Plant Invasions in Yunnan Province, China" New England Invasive Plant Summit. Framingham, MA. (September 2003).

Invited Plenary speaker, "Prevention, interception, and eradication of invasive alien plants: Future prospects" 7th International Conference on the ecology and management of alien invasive plants. Ft. Lauderdale, FL (November, 2003).

Invited symposium speaker, "Human perceptions of useful plants strongly affect the establishment and spread of alien species." 7th International Conference on the ecology and management of alien invasive plants. Ft. Lauderdale, FL (November, 2003).

Invited plenary speaker. "A prescription for plant invasions: the interaction of attributes, environment and circumstances." American Institute of Biological Sciences. Annual meeting. WA, DC (March 2004).

Invited symposium keynote speaker. "Does inter-regional floristic relatedness foster plant invasion: exchanges between eastern Asia and North America" Beijing International Symposium on Biological Invasion. Species Exchanges between Eastern Asia and North America: Threats to Environment and Economy. Beijing, China (June 2004).

Invited meeting speaker. "GISP: the Global Invasive Species Program" The 2nd Weeds Across Borders meeting. Minneapolis, MN (June 2004).

Invited symposium speaker. "Predicting the identity of plant invaders: future contributions from horticulture." Annual meeting, American Society for Horticultural Science. Austin, TX (July 2004).

Invited speaker and symposium co-organizer. "Potential plant invasions between eastern Asia and North America: why should we be concerned?" in symposium "Biological invasions: Species exchanges between eastern Asia and North America." Annual meeting, Ecological Society of America, Portland, OR. (August 2004).

Invited plenary speaker (two plenary talks). "Trade Routes for Commerce in Plants or Pathways for Invasive Species? The Dualism of International Commerce." and "Eradication or Control? Combating plants through a lump sum payment or on the installment plan." 14th Australian Weeds Conference. Wagga Wagga, Australia (September 2004).

Invited symposium speaker. "Does inter-regional floristic relatedness foster plant invasion: exchanges between eastern Asia and North America." 2004 Janet Meakin Poor Research Symposium: Conservation and Restoration of Plant Communities. Chicago, IL (October 2004).

Invited workshop speaker. "Global plant dispersal: modes, pathways and circumstances" Prevention and Management of Invasive Alien Species (IAS) in China. Chinese Academy of Agricultural Sciences. Beijing, China (November 2004).

Invited symposium speaker "Can science predict the next kudzu?" 19th Annual Lahr Symposium, U.S. National Arboretum, Washington, DC (March 2005).

Invited keynote speaker. "The fate of Chinese understory species in coniferous forests of the Pacific Northwest: the consequences of species exchanges." Mountain Invasions Research Network workshop. Vienna, Austria (July 2005).

Invited symposium keynote speaker. "The invasion of *Bromus tectorum* in North America: The role of pre-immigration evolution." International Botanical Congress. Vienna, Austria. (July 2005).

Speaker and symposium co-organizer. "Invasive plants as missing life forms: new perspective on the Vacant Niche Hypothesis." In symposium "Prediction and Prioritization of Future Invasive Species" Annual Meeting, Ecological Society of America, Montreal, Canada (August 2005).

Invited workshop speaker. "Quantifying the impact of invasive alien species at multiple spatial scales: the case for *Bromus tectorum*" in workshop "Quantifying the Impacts Of Invasive Species." ESA "Ecology in an Era of Globalization Conference", Merida, Mexico (January 2006).

Invited Public Lecture. "Addressing the Threat of Invasive Alien Plants: a Blueprint for National Action" Idaho Academy of Sciences Annual Meeting. Moscow, ID (March 2006).

Invited speaker. "National status of invasive plants in the United States." Weeds Across Borders, 2006. U.S. Department of Transportation. Hermosilla, Mexico (May 2006).

Invited speaker. "Sources of future invasive species: the contribution from horticulture" Invasive Plants: Practical Problems and Research Opportunities Workshop, Indiana University, Bloomington, IN (April, 2006).

Invited Plenary Session speaker. "Causes and (some) consequences of biological invasions." In plenary session "Nematodes as Invasive Species." 45TH Annual Meeting of the Society of Nematologists, Kauai, HI (June 2006)

Invited speaker, "Eradication or Control? Combating plants through a lump sum payment or on the installment plan." Indo-U.S. Science & Technology Forum workshop, "Indo-U.S. workshop on invasive plants in Indian Protected Areas", Corbett National Park, India, November 2006.

Keynote speaker, "Biological invasions: Recommendations for U.S. policy and management." International Workshop on the Biological Control of Invasive Species of Forests, Beijing, P. R. China, September 2007.

Invited speaker and session moderator, "Eradication of invasive species is both possible and necessary: case studies." International Workshop on the Biological Control of Invasive Species of Forests, Beijing, P. R. China, September 2007.

Invited symposium speaker, "*Arundo donax*: a case study of a feedstock crop with invasive potential" In symposium "Invasive species and the new bioeconomy" WSSA annual meeting, Chicago, IL, Feb. 2008.

Invited panelist, "The Ecological Society of America: effectively communicating consensus science." Non-Governmental Organization (NGO) Roundtable at NIWAW9, Washington, DC, February, 2008.

Invited session keynote speaker. "Plant invasions in western North America: implications for temperate grasslands worldwide" In: Grasslands/Rangelands Production Systems, session 8. International Grassland Congress, Hohhot, China, July, 2008.

Invited plenary speaker. “Predicting biological invasions under global climatic change: complexity²”
Natural Areas Association Conference, Nashville, TN, October, 2008.

Invited keynote speaker, “Calling all economists: ED/RR needs your help!” USDA Economic
Research Service PREISM Workshop. Washington, DC, October 2008.

Invited speaker, “Prevention, Interception, and Eradication of Invasive Alien Plants: Future
Prospects.” and “Early Detection and Rapid Response (ED/RR) for invasive species.”
International Workshop and Training Course on Invasive Species
Wuhan, China. October, 2008.

Invited Plenary Speaker, “Eradication/control of invasive species in arid ecosystems: the need for
sound science, effective policies and an engaged public”. In: Wildfires and Invasive Plants in
American Desert Symposium, Society for Range Management, Reno, NV, December 2008.

Invited Symposium Speaker, “Invasion! Immigration and spread of *Bromus tectorum* genotypes
across North America: allozyme and historical evidence” In: Ecology and management of
invasive annual grasses in the West: Current state of knowledge and future directions. 62nd
Annual Meeting, Society for Rangeland Management, Albuquerque, NM, Feb. 2009.

Invited symposium speaker, “Resolving the “Requires further evaluation” dilemma in plant
quarantine: developing field trials” In: Challenges for plant risk assessment: climate, comparators
and confined field trials. Canadian Food Inspection Agency. Ottawa, Canada, March 2009.

Invited speaker. “How to avoid choosing a potential plant invader as a bio-fuel feedstock” In:
Environmental Impacts of GE Bioenergy Crops Workshop. USDA-APHIS, Riverdale, MD, June
2009.

Invited symposium speaker, “Measuring the environmental impacts of Invasive Alien Species across
the spatial gradient” In: Quantifying the environmental impacts of invasive species. International
Congress of Ecology, Brisbane, Australia, August 2009.

Invited symposium speaker. “Curbing invasive plants in the U.S.: prevention, eradication and (at last
resort) control” In: Impacts of Invasive Species on Biodiversity and Land Use" symposium.
Society of Agronomy Conference, Pittsburgh, PA, November 2009.

Invited keynote speaker. “Eradication or Control? Combating invasive plants through a lump sum
payment or on the installment plan. Ohio Invasive Plant Council Conference. Columbus, OH,
February 2010.

Invited Plenary Speaker. “Waging war on cheatgrass: the need for new tools, tactics and strategies”
Society for Range Management and Weed Science Society of America Joint Annual Meeting,
Denver, CO, Feb. 2010.

Invited symposium speaker. “Invasions across the global landscape” Society for Range Management
and Weed Science Society of America Joint Annual Meeting, Denver, CO, Feb. 2010.

Invited witness. Field hearing “Losing Ground: The War on Buffelgrass.” U.S. House of

Representatives, Committee on Natural Resources, Tucson, April 2010.

Invited Keynote Speaker “Invasive plants as catalysts for the spread of human parasites”
NEOBIOTA 2010 Conference, Copenhagen, Denmark, September 2010.

Symposium speaker. “Naturalization/invasion of ornamental bamboos in montane forests in the Western United States: the potential for multiple environmental hazards” in: Global Change and the World’s Mountains Conference, Perth, U.K., September 2010.

Invited Keynote Speaker, “Naturalization of ornamental bamboos in montane forests in the western U.S.: the potential for multiple environmental hazards.” Second Invasive Species in Natural Areas Conference, Coeur d’Alene, ID, October 2010.

Invited speaker, “A Nested-Sieve Evaluation of Species Proposed for Introduction” in Canadian Food Inspection Agency (CFIA) Science Symposium “Better models – Better assessment: the use of models in plant health and biotechnology risk assessment.” Ottawa, Canada Feb. 2011.

Invited speaker, “Waging war on cheatgrass: Preventing - not just controlling – rangeland fires in the West”. National Coalition for Food and Agricultural Research (NCFAR) “Lunch N’ Learn” seminar series for U.S. House of Representatives, Committee on Agriculture. Washington, DC, Feb. 2011.

Invited speaker, “Temperate Asian bamboos lack common characteristics of plant invaders but not the potential to invade” in symposium (SYM 025), “Evolutionary ecology of adaptation during plant invasion”, International Botanical Congress, Melbourne, Australia, July 2011. (M.C. Smith, co-author).

Speaker, “Searching for microbial biological control candidates for invasive grasses: expanded field research with strides in biotechnology and grassland restoration” XIIIth International Symposium on the biological control of weeds. Kona, Hawaii (September 2011).

Invited Keynote speaker, “Outreach to the forefront: We all now need to be public advocates for invasive plant control” Invasive Plant Council of British Columbia Research Forum, Richmond, BC. October 2011.

Invited speaker. “The US and China: active trading partners in commerce and biological invaders” National Invasive Species Advisory Committee (ISAC) Meeting, Washington, DC, December 2011.

Keynote speaker. Temperate Asian bamboos: could they occupy (and alter) Pacific Northwest forests? Oregon Invasive Species Council Annual Meeting, Salem, OR, February 2012.

Invited Congress Speaker. Predicting potentially invasive plant species: melding biogeography with ecological field trials. Plant Biology Congress, Freiburg, Germany, July 2012.

Orator, Council of Australasian Weed Societies (CAWS), 18th Australasian Weeds Conference, Melbourne, Australia, October 2012.

Invited speaker, “Outreach on Invasion Biology Management and Policy: Closing the Information Gap with a Wary Public” in symposium “Biological invasions: how to reconcile science, management and policy” INTECOL, London, August, 2013.

Invited speaker. “Introduced bamboos as catalysts for the spread of a pathogen: A circuitous path to testable hypotheses” Plant Ecology, Evolution, and Conservation: A Celebration of Big Science Symposium. UC (Davis), September 2014.

Invited Seminars:

University of Houston, Department of Biological Sciences (autumn, 1975)
University of Washington, Department of Botany (winter, 1976)
University of Idaho, Department of Biology (spring, 1976)
University of Texas, Department of Botany (spring, 1978)
University of Alberta, Department of Botany, Edmonton, Alberta (autumn, 1979)
University of British Columbia, Department of Botany, Vancouver, B.C. (spring, 1980)
University of Washington, Quaternary Research Center (spring, 1981)
Utah State University, College of Natural Resources (December 1981)
Oklahoma State University, Departments of Botany & Zoology (April 1982)
University of Washington, Department of Botany (spring, 1982)
University College of North Wales, School of Plant Biology, U.K. (October, 1983)
University of Cambridge, The Botany School, U.K. (November, 1983)
University of East Anglia, School of Biological Sciences, U.K. (November, 1983)
University of London, School of Biological Sciences, Queen Mary College, U.K. (November, 1983)
University of Liverpool, Department of Botany, U.K. (December, 1983)
University of California (Davis), Department of Agronomy & Range Science (May, 1984)
University of Minnesota, Department of Ecology & Behavioral Biology (October, 1984)
University of California (Berkeley), College of Forestry (October, 1984)
University of Idaho, Department of Biology (December, 1984)
Oregon State University, Department of Botany & Plant Pathology (March, 1985)
Rice University, Department of Biology (April, 1985)
Harvard University, Department of Organismic & Evolutionary Biology (April, 1985)
University of Colorado, Department of Environmental, Populational, and Organismic Biology (September, 1985)
Rutgers University (Piscataway), Department of Biological Sciences (October, 1985)
Idaho State University, Department of Biology (November, 1985)
Imperial College (Silwood Park), Department of Pure & Applied Biology, U.K. (February, 1986)
University of Georgia, Savannah River Ecology Laboratory (April, 1986)
Texas A & M University, Department of Range Science (March, 1987)
University of Washington, Department of Botany (November, 1987)
University of California (Davis), Institute of Ecology (April, 1988)
University of Saskatchewan, Department of Crop Science & Plant Ecology (April, 1989)
University of Hawaii, Department of Botany (May, 1989)
Colorado State University, Department of Biology (November, 1990)
University of Washington, Department of Urban Horticulture (November, 1991)
Biological Society of Iceland, Reykjavik, Iceland, (March, 1994)
Harvard University, Department of Organismic & Evolutionary Biology (April, 1995)
Tropical Weeds Research Center, CSIRO, Charters Towers, Queensland, Australia (October, 1996)
University of Illinois, Department of Ecology, Ethology & Evolution (April, 1997)
Stanford University, Department of Biology (April, 1997)
CSIRO, Division of Entomology, European Laboratory, Montferrier sur Lez, France (May, 1997)

Washington State University (Vancouver) (February, 1998)
University of Minnesota, Department of Ecology, Evolution and Behavior (March, 1998)
University of Arizona, School of Renewable Natural Resources and Department of Plant Pathology (February, 1999)
Boise State University, Department of Biology (March, 1999)
University of Otago, Department of Botany, Dunedin, New Zealand (May, 1999)
Landcare Research (CRI), Lincoln, New Zealand (May, 1999)
University of Auckland, Department of Environmental & Marine Sciences, Auckland, New Zealand (May, 1999)
CSIRO, Division of Entomology, Canberra, Australia (July 1999)
University of Laval, Department of Biology, Quebec, Canada (October 1999)
University of Copenhagen, Botanical Institute, Denmark (December, 1999)
University of Tübingen, Botanical Institute, Germany (December, 1999)
Division of Wildlife and Ecology, CSIRO, Canberra, Australia. July 2000
Queensland Department of Natural Resources, Sherwood, Australia (October 2000)
CSIRO- Division of Entomology, Canberra, Australia (March 2001)
Murdoch University, Perth, Australia (April 2001).
CSIRO- Division of Entomology, Darwin, Australia (May 2001)
Colorado State University, College of Natural Resources (October 2001)
University of Massachusetts, Department of Organismic and Evolutionary Biology (November 2001)
Chinese University of Hong Kong, Department of Biology (December 2001)
University of British Columbia, Department of Botany (January 2002)
Michigan State University, Ecology and Evolutionary Biology Program (April 2002)
University of California (Davis), Plant Biology Graduate Program (April 2002)
University of Brasilia, Brasilia (August 2002).
Institute of Botany, Academy of Sciences of the Czech Republic (October 2002)
University of Idaho, Center for Natural Resources (Feb. 2003)
Lehigh University, Department of Earth and Environmental Sciences (March 2003)
University of Connecticut, Department of Ecology and Evolutionary Biology (September 2003)
University of Florida, Department of Botany (October 2003)
University of Central Florida, Department of Biology (October 2003)
University of Washington, Center for Urban Horticulture (December 2003)
Geobotanisches Institut ETH, Swiss Federal Institute of Technology, Switzerland (January 2004)
Département de Biologie/Ecologie & Evolution, Université de Fribourg/Pérolles Switzerland (Jan. 2004)
University of British Columbia, Department of Forest Sciences (February 2004)
Institute of Botany, Chinese Academy of Sciences, Beijing, China (November 2004)
Ohio State University, Environmental Sciences (February 2005)
University of Alberta, Dept. of Applied Ecology and Land Reclamation (Feb. 2005)
University of Montana, Division of Biological Sciences (March 2005)
University of Toronto, Department of Botany (April 2005)
California State University, Department of Biology, Chico, CA (April 2005)
Carleton College, Northfield, MN (October 2005)
Macalester College, St. Paul, MN (October 2005)
Miami University, Department of Botany, Oxford, OH (October 2005)
Washington State University-Vancouver, Science Program, Vancouver, WA (December 2005)
Duke University, Nicholas School of the Environment and Earth Sciences (January 2006)
University of Tennessee, Department of Ecology & Evolutionary Biology, (January 2006)
University of California (Berkeley), Department of Integrative Biology (Feb. 2006)
Yale University, School of Forestry & Environmental Studies (March 2006)
University of Rhode Island, Dept. of Natural Resources Science (March 2006)

Rutgers University, Dept. of Ecology, Evolution and Natural Resources (March 2006)
New York Botanical Garden (March 2006)
Gonzaga University, Department of Biology (April, 2006)
University of Toronto at Mississauga, Department of Biology (October 2006)
Michigan Technological University, School of Forest Resources & Environmental
Science (October 2006)
Cornell University, Department of Ecology & Evolutionary Biology (October 2006)
Georgia Southern University, Department of Biology (October 2006)
Clemson University, Department of Biology (October 2006)
University of Delhi, Department of Botany, New Delhi, India (November 2006)
McGill University, Department of Biology (January 2007)
University of Toronto, Department of Ecology & Evolutionary Biology (Feb. 2007)
University of Toronto, Centre for Global Change Science (March 2007)
University of Texas, Integrative Biology Program (March 2007)
University of Guelph, Department of Integrative Biology (March 2007)
Carleton University, Department of Biology (March 2007)
Plant Health Risk Assessment Unit (PHRA), Canadian Food Inspection Agency (March 2007)
Smithsonian Environmental Research Center, Edgewater, MD (October 2007)
University of Wyoming, Departments of Botany (January 2008)
University of Nevada (Reno), Ecology, Evolution and Conservation Biology
Program, Reno, NV (March 2008)
Washington University, Biology Department (April 2008)
Western State College of Colorado, Department of Natural and
Environmental Sciences (September 2008)
Brigham Young University, Department of Biology (March 2009)
University of Delaware, Department of Entomology & Wildlife Ecology (March 2009)
USDA/APHIS [PPQ] Headquarters, Riverdale, MD (March 2009)
CSIRO- Division of Entomology, Indooroopilly, Australia (August 2009)
CSIRO- Division of Entomology, Canberra, Australia (August 2009)
Office of the Gene Technology Regulator, Canberra, Australia (August 2009)
Washington State University, Department of Entomology (October 2009)
Ohio State University, Dept. of Evolution, Ecology, & Organismal Biology (Feb. 2010)
Western Washington University, Department of Biology (April 2010)
Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, China (June 2010).
University of Stirling, School of Biological and Environmental Sciences, Stirling, U.K.
(September 2010).
University of British Columbia, Department of Botany, Vancouver, BC (March 2011)
Texas A&M University, Department of Ecosystem Science and Management (2011 Annual E. J.
Dyksterhuis Distinguished Lecture Series) (April 2011).
Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, China (June 2011).
Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences,
Urumqi, China (June 2011)
Foreign Disease-Weed Science Research Unit, USDA/ARS, Ft. Detrick, MD (December 2011)
Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, China (May 2012).
Urban Bushland Council, Perth, Australia (October 2012).
Western Australia Department of Agriculture & Food, Perth, Australia (October 2012)
University of Wollongong, Institute for Conservation Biology and Environmental Management,
Wollongong, Australia (October 2012)

Whitman College, Department of Biology, Walla Walla, WA (November 2012)
CABI (Centre for Agricultural Bioscience International), Egham, U.K. (February 2013)
University of Texas-Pan American, Department of Biology, Edinburg, Texas (March 2013)

Teaching Assignments (2006-2015):

(2008-2009)

Fall Semester:	<i>Biol 462/562</i>	Community Ecology
	<i>Biol. 565</i>	Invasion Biology
Spring Semester:	<i>Biol 372</i>	General Ecology
	<i>Biol 463/563</i>	Field Ecology

(2009-2010)

Fall Semester:	<i>Biol 462/562</i>	Community Ecology
Spring Semester:	<i>Biol 372</i>	General Ecology
	<i>Biol 393</i>	Seminar (writing in science course)

(2010-2011)

Fall semester	<i>Biol. 462</i>	Community Ecology
	<i>Biol. 589</i>	Special topics in biology
Spring Semester:	<i>Biol 372</i>	General Ecology
	<i>Biol 563</i>	Field Ecology

(2011-2012)

Fall semester	<i>Biol 462</i>	Community Ecology
Spring Semester:	<i>Biol 372</i>	General Ecology
	<i>Biol 393</i>	Seminar (writing in science course)

(2012-2013)

Professional Leave, various field locales & WSU

(2013-2014)

Fall semester	<i>Biol 462/562</i>	Community Ecology
Spring Semester:	<i>Biol 372</i>	General Ecology

(2015)

Spring Semester:	<i>Biol 372</i>	General Ecology
------------------	-----------------	-----------------